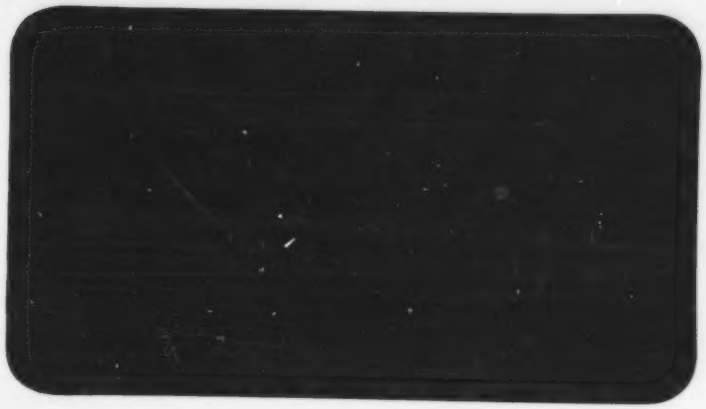
MANITOBA HAZARDOUS WASTE MANAGEMENT CORPORATION

Corporate Profile The Manitoba Hazardous Waste Management Corporation is a commercial Crown corporation established to develop and operate a hazardous waste management system for Manitoba. Its mandate is to provide for the handling of regulated hazardous wastes from their source through to their treatment and disposal, consistent with high standards of public health, safety and environmental quality.



Environmental Policy Statement

The Manitoba Hazardous Waste Management Corporation is committed to the preservation and enhancement of environmental quality through the development of a hazardous waste management system for the province. This undertaking is a fundamental element needed to achieve the broader objectives of universal environmental stewardship and sustainable economic development within Manitoba.

To reach these goals, the Corporation uses the following policy objectives as the basis for the performance of its work.

- Minimize waste generation and maximize resource conservation through the promotion and facilitation of waste reduction, recycling, re-use and recovery at source.
- Ensure that all activities involved with the handling, storage, treatment and disposal of waste and residue products are consistent with the protection of public health and environmental quality.
- Earn public approval of the system and its components through open and responsive communication and through public participation in all aspects of their development and operation.
- Encourage economic development through the provision of a cost-effective waste management system and the enhancement of environmentally based enterprises.
- Foster and promote contemporary environmental values and policies through public education and research, as well as by example.
- Assume, in perpetuity, the environmental stewardship of wastes and residues placed in the Corporation's custody.

Information regarding the activities and programs of the
Manitoba Hazardous Waste Management Corporation can be obtained from:
226-530 Century Street, Winnipeg, Manitoba R3H 0Y4
Telephone: (204) 945-1844 Toll Free: 1-800-782-2474 In Manitoba

SITE SCREENING INVESTIGATIONS

IN THE

CITY OF WINNIPEG

by:

The Manitoba Hazardous Waste
Management Corporation

June 1990

1. INTRODUCTION

This report summarizes the initial work undertaken by the Manitoba Hazardous Waste Management Corporation in identifying potential sites for a hazardous waste management facility within the City of Winnipeg. It has been undertaken in response to the invitation to the Corporation extended by Winnipeg City Council on January 25, 1990 to investigate the city as a host community for the facility. The report includes a brief summary of the Corporation's site selection process and its potential application to siting within the City.

A computer based Geographical Information System (GIS) has been used to map pertinent natural, cultural and land use features within the City. Consistent with the approach used on a provincial scale, this information is combined to identify areas which may be suitable for further consideration in site selection. The results of this "screening" process are discussed along with an initial evaluation of City owned lands which have been put forward for consideration.

2. BACKGROUND

The Manitoba Hazardous Waste Management Corporation is a commercial Crown Corporation. It is currently undertaking the planning and development of a comprehensive hazardous waste management system for the province in addition to providing a variety of operational waste management services.

The system planning and development work has progressed to the point that the elements of this system have been identified, the waste market has been characterized, the major facilities required have been defined and the overall options for siting have been developed. The Corporation is proposing the development of an overall system for the management of regulated hazardous waste, integrated from source through to its treatment and disposal. This is consistent with the direction advocated by the Clean Environment Commission as a result of the first phase of the provincial overall hazardous waste management program (1982 - 1987). The principal elements of this operating system are:

- Source based management capability;
- Collection and storage infrastructure; and,
- Treatment and disposal facilities.

The system being proposed is intended to manage the complete range of materials subject to provincial regulation under the The Dangerous Goods Handling and Transportation Act. It will also make provision for the management of industrial waste streams that, while not regulated as hazardous wastes, are restricted by municipal regulations from access to conventional waste management facilities. Materials under exclusive federal regulation, notably radioactive and explosive materials are excluded.

The estimated volume of hazardous waste produced in Manitoba, and which will require management by the overall system, is at least 178,700 tonnes/year. The large majority of this material can be managed at source through on-site treatment utilizing reduction, reuse, recycling and recovery techniques. However, an estimated 22,679 tonnes/year of material will require some form of off-site treatment. This is comprised of 9422 tonnes/year of organic materials and 13,257 tonnes/year of inorganic materials. In excess of 80 percent of this material originates in the Winnipeg region.

In April, 1990, the Corporation filed a Project Proposal with the Government of Manitoba, Department of Environment. The proposal outlines the Corporation's activities to date and details two development options which include:

- An integrated hazardous waste management facility with all required storage, transfer, treatment and disposal capabilities located on a single site in, or near, the City of Winnipeg; and

- A hazardous waste storage/transfer facility located in or near Winnipeg and a rural central treatment facility, primarily dedicated to inorganic waste treatment and disposal.

Also outlined in this document and its supporting material is the Corporation's siting approach and the proposed methodology for the required environmental impact assessment to be applied to these developments. Consistent with the practices applied under the Manitoba Environment Act, it is anticipated that the regulatory authority will issue environmental assessment guidelines.

The Corporation is proceeding with its site selection program on the basis that either of the above development options could ultimately be selected. The current schedule, while controlled largely by community response, calls for the identification and evaluation of sites in 1990 with the submission of a site specific development proposal in early 1991.

The proposed system does not include an incinerator but does include the capacity for the collection, storage and consolidation of organic materials such that they can be exported to treatment and disposal facilities elsewhere. The central treatment facility would be a physical/chemical treatment plant which would process primarily inorganic wastes such as acidic or alkaline solutions or solutions containing heavy metals. All solid by-products of the treatment process will be immobilized in a stabilized matrix, and placed in controlled and monitored landfill cells. Treated process water will be reused in the treatment plant or discharged to a water course after meeting water quality standards.

A voluntary, co-management approach to siting and development of these facilities has been adopted. The Corporation initiated its site selection process in late 1988 with the publication of its proposed siting criteria and provincial screening results. This has been applied in a number of locations expressing interest in the development since that time. The basic characteristics of an acceptable site as defined in this process are:

- Environmental Acceptability - potential sites must demonstrate a high level of natural environmental protection; and

- Community Acceptability - a high level of public acceptance for the development must be demonstrated by the community within which the site is located.

The first step in implementing this program was the application of "screening criteria" at a provincial level to identify potentially suitable areas from an environmental perspective. This information was widely distributed and the Corporation responded to expressions of interest from communities. Those within potentially suitable areas were invited to learn more about the project and a proactive public consultation program has been implemented in these communities.

The Corporation initiated discussion with the City of Winnipeg regarding its overall mandate and objectives in late 1988 when the provincial site selection program was initiated. At the direction of the Works and Operations Committee, consultation was initiated with the City Administration during 1989. This resulted in the preparation of a conceptual proposal which was submitted to the Waterworks, Waste and Disposal Department in September, 1989, requesting the City's involvement in pursuing the development of infrastructure within the City to manage hazardous wastes. This proposal was broad in nature in that it suggested a range of development options including an industrial park concept which could provide an appropriate place to locate innovative waste management facilities and associated environmental enterprises in addition to the infrastructure required for the management of hazardous wastes.

In response, City Council passed a Resolution on January 25, 1990 formally inviting the Corporation to investigate Winnipeg as a potential site for development of a hazardous waste treatment and disposal facility. The site selection work for the City of Winnipeg was formally initiated at that time. Briefing presentations have been made to all Community Councils in parallel with the initial site selection activities. On June 26, 1990, the City Administration presented the results of its work with the Corporation to the Standing Committee on Works and Operations. The Committee approved the recommendation that the Corporation be asked to proceed with public consultation and presentations on its evaluation of four sites identified as having potential for development, and that subsequently, Council grant its approval for the detailed investigation of one or more of the these sites. Table 1 provides a chronological list of presentations made to date to the City.

TABLE 1

ACTIVITY SUMMARY - CITY OF WINNIPEG

ACTIVITY	DATE	PURPOSE/RESULT
Works and Operations Committee Meeting	01/11/88	MHWMC General Presentation
Executive Policy Committee Meeting	24/04/89	MHWMC General Presentation
Correspondence - Director Waterworks	25/09/89	Proposal Submission-Industrial Park
Assiniboine Park-Fort Garry Community Council	23/01/90	MHWMC General Presentation
City Council Meeting	25/01/90	Site Selection Resolution
East Kildonan-Transcona Community Council	27/02/90	MHWMC General Presentation
St. Boniface-St. Vital Community Council	27/02/90	MHWMC General Presentation
City Centre-Fort Rouge Community Council	06/03/90	MHWMC General Presentation
St. James-Assiniboia Community Council	20/03/90	MHWMC General Presentation
Lord Selkirk-West Kildonan Community Council	10/04/90	MHWMC General Presentation
Works and Operations Committee Meeting	26/06/90	Administration Recommendation to Proceed with Detailed Site Investigation

3. SITE SCREENING

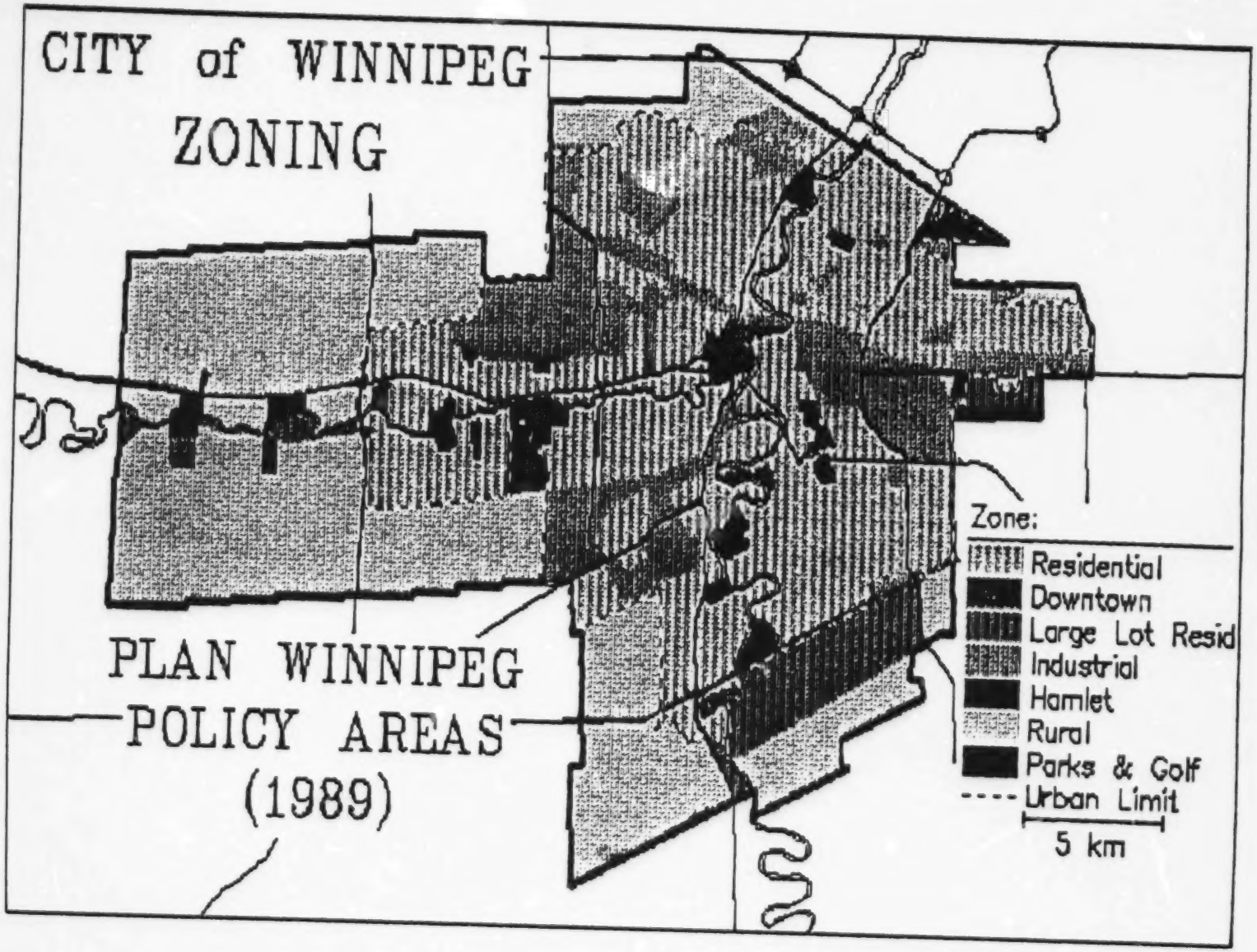
The Corporation initiated its technical site screening program for the City using the same process as that being applied in other potentially suitable municipalities. A computer-based Geographical Information System (GIS) was used to map and display environmental, cultural and land use features within the study area. The area was then screened by applying site selection criteria to the mapped information to define regions of interest. The regions identified through this process have potential to meet a more comprehensive set of siting criteria. The following sections summarize the results of this initial site screening work as it was applied to the City of Winnipeg.

3.1 Identification of Areas of Interest

The study area is defined as the City of Winnipeg. For mapping purposes, a one kilometer buffer was also included to accommodate adjacent land uses and resources which may influence consideration of properties within the City. A base map has been prepared for the City including pertinent cultural, land use and environmental features as outlined in Table 2. Figures 1, 2 and 3 display zoning, land use and environmental features, respectively within the City.

Table 3 lists the criteria which have been applied in the screening process. These criteria were derived from the Discussion Document "Proposed Site Selection Criteria for the Development of a Hazardous Waste Management System" (1988). The screening criteria include the Provincial Screening Criteria and selected Environmental and Land Use criteria which are appropriate to consider for an urban setting. The "Areas of Greatest Interest" map (Figure 4) was generated by applying all of these criteria to the City environment. It should be emphasized that the application of these criteria remains flexible and should be viewed as proposed. As such, they are subject to further input by the City, public and regulatory authorities, in the course of their application on a more localized basis.

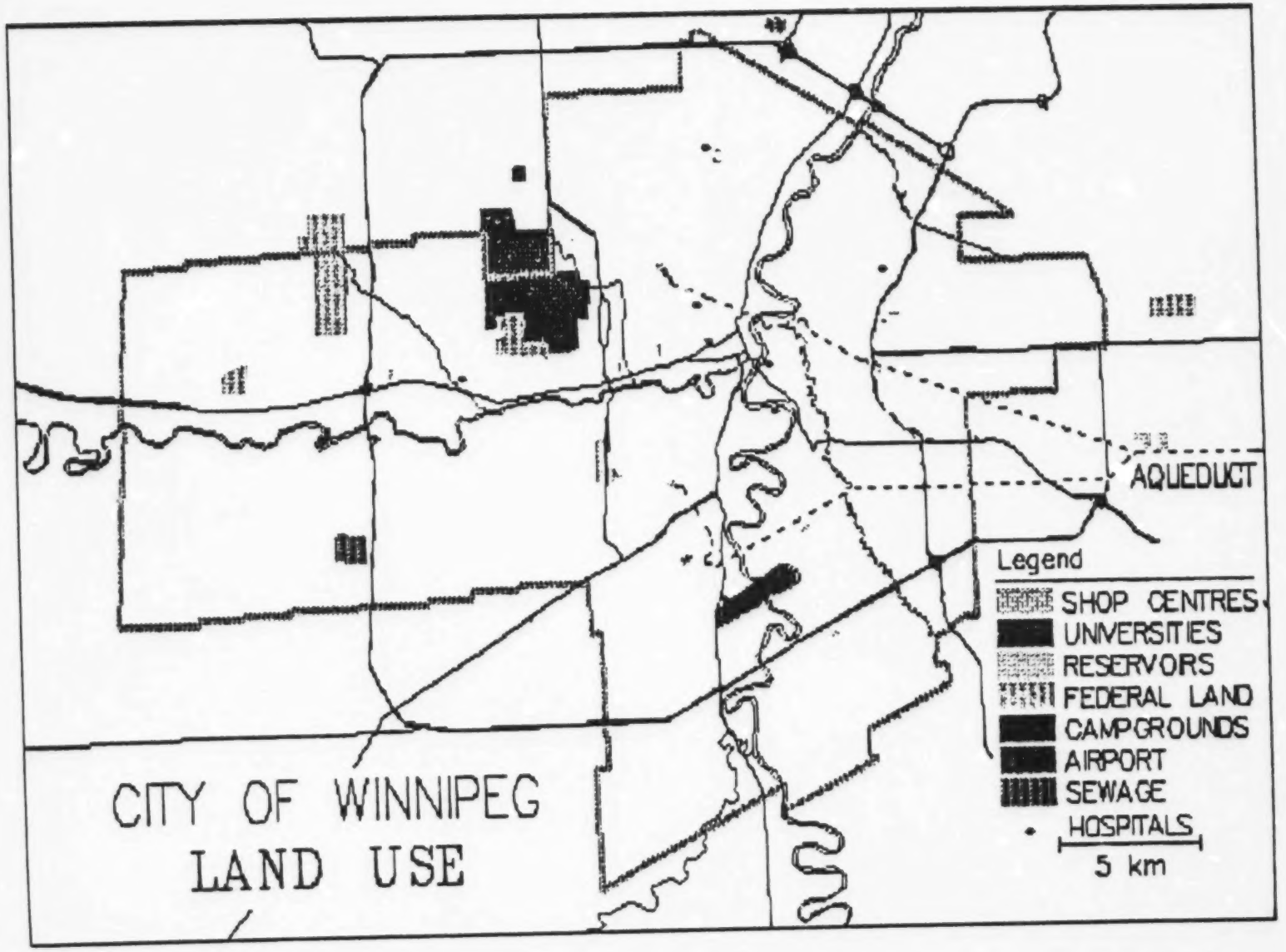
FIGURE 1



Manitoba Hazardous Waste Management Corporation

I.D. Systems Ltd.

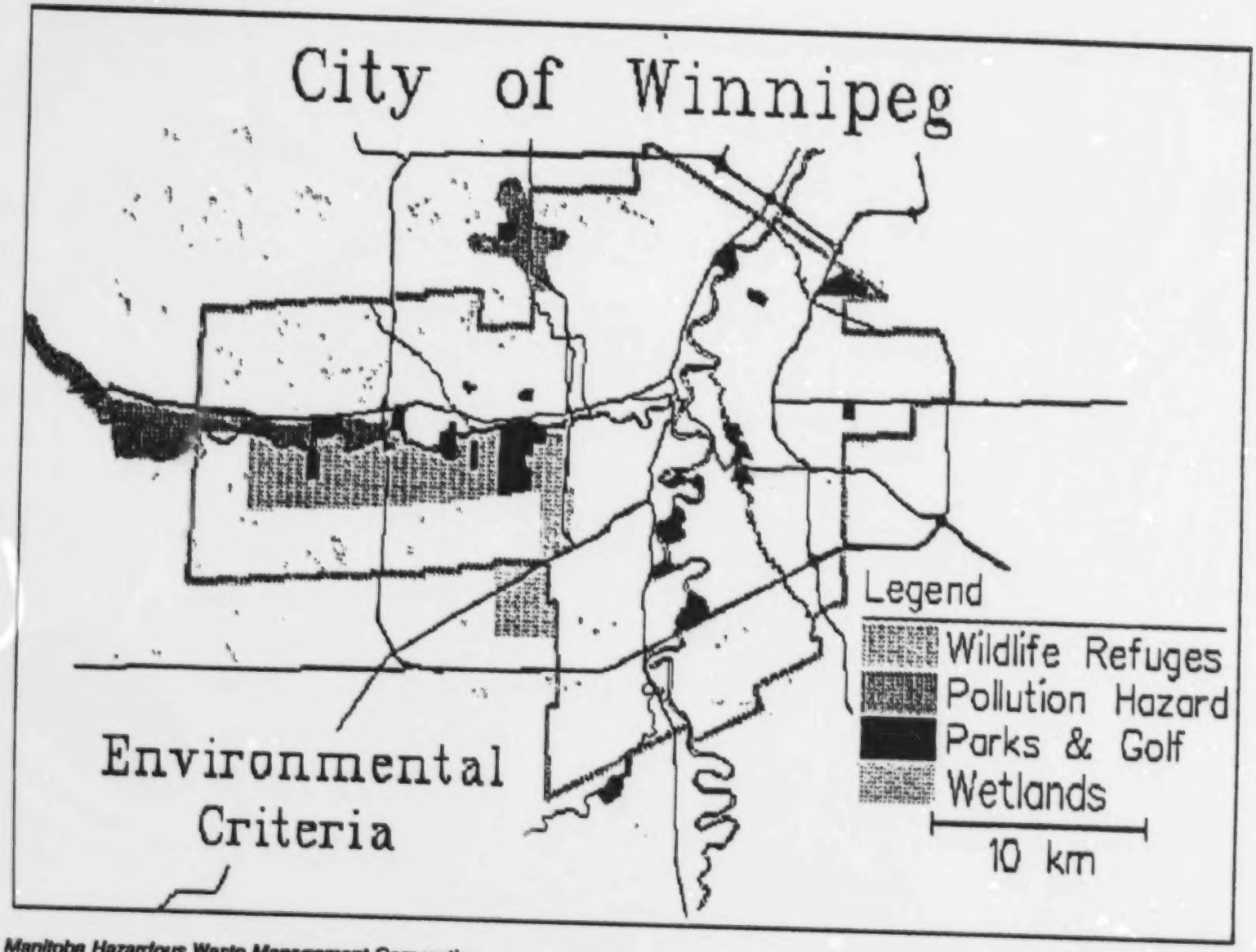
FIGURE 2



Manitoba Hazardous Waste Management Corporation

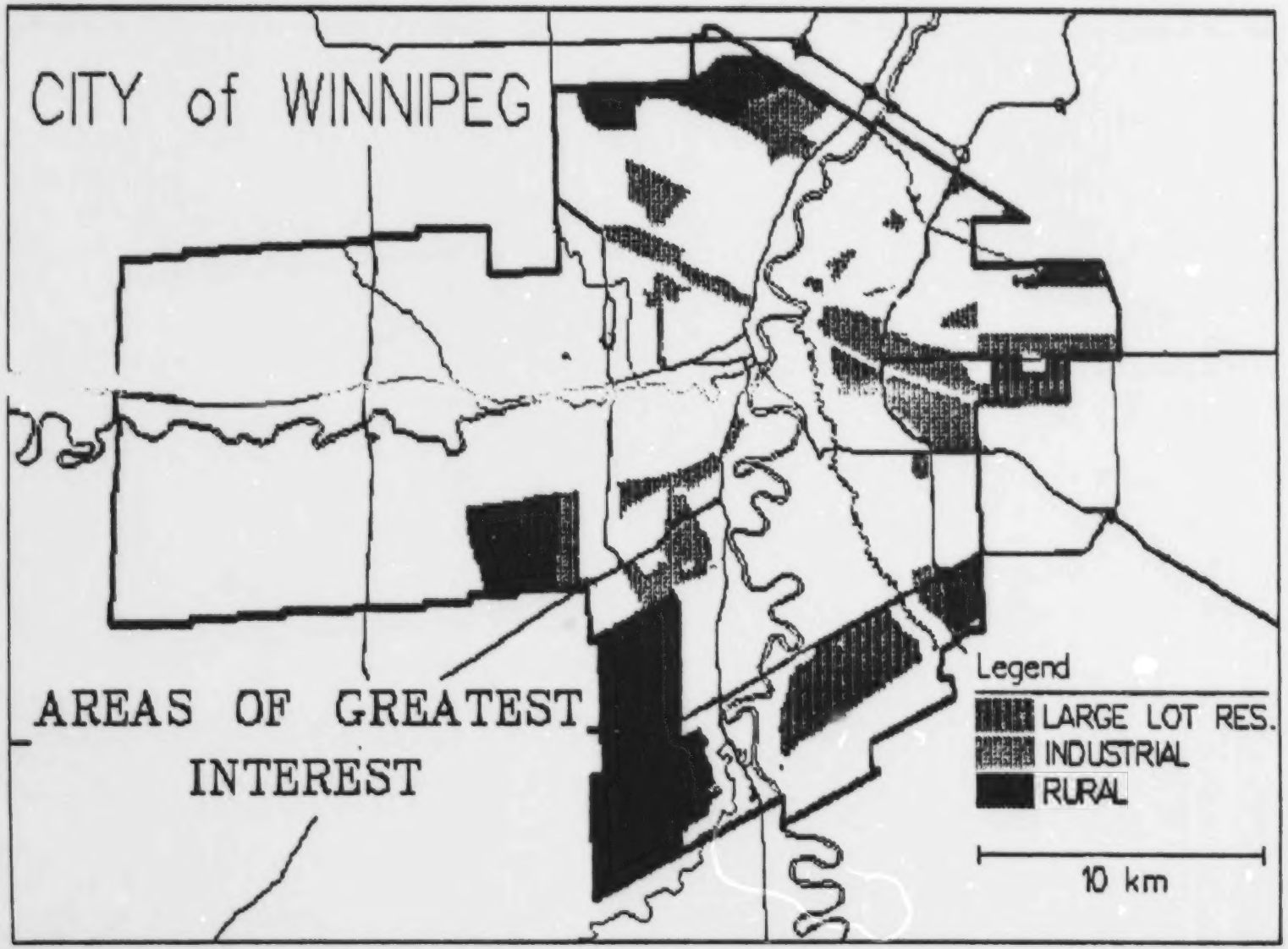
I.D. Systems Ltd.

FIGURE 3



Manitoba Hazardous Waste Management Corporation

I.D. Systems Ltd.



Manitoba Hazardous Waste Management Corporation *I.D. Systems Ltd.*

TABLE 2

CITY OF WINNIPEG
BASE MAP INFORMATION

Feature	Information Source
Cultural Features	
Roads and Truck Routes	Energy Mines and Resources 1:50,000 Map Sheet
Rail Lines	Energy Mines and Resources 1:50,000 Map Sheet
International Airport	Energy Mines and Resources 1:50,000 Map Sheet
Landfills	Geological Engineering, U. of M. (1983)
Urban Limit Line	Plan Winnipeg (1989)
Aqueduct and Reservoirs	City of Winnipeg, Waterworks, Waste and Disposal
Land Use Features	
Residential Land	Plan Winnipeg (1989)
Large Lot Residential Land	Plan Winnipeg (1989)
Parks and Golf Courses	Plan Winnipeg (1989)
Campgrounds	Energy Mines and Resources 1:50,000 Map Sheet
Industrial Land	Plan Winnipeg (1989)
Rural Land	Plan Winnipeg (1989)
Hamlet	Plan Winnipeg (1989)
Federal Land	Energy Mines and Resources 1:50,000 Map Sheet
Environmental Features	
Streams and Rivers	Energy Mines and Resources 1:50,000 Map Sheet
Flood Plain	Environment Canada/Manitoba Natural Resources, 1979
Groundwater Pollution Hazard Areas	Manitoba Natural Resources, 1978
Surficial Geology	Geological Engineering, U. of M. (1983)
Ecological Reserves/Wildlife Land	Manitoba Natural Resources, 1989
Land Capability for Agriculture	Canada Land Inventory, 1966
Land Capability for Waterfowl	Canada Land Inventory, 1973
Land Capability for Ungulates	Canada Land Inventory, 1974

TABLE 3

CRITERIA APPLIED TO THE IDENTIFICATION OF REGIONS OF INTEREST WITHIN THE CITY OF WINNIPEG

Criteria	Classification	Justification
GENERAL SCREENING CRITERIA		
Flood Plain	Excluded	Protection of facility integrity
Groundwater Pollution Hazard Areas	Excluded	Protection of groundwater quality
Municipal Parks	Excluded	Preservation of parkland
Class 1 Agricultural Lands	Excluded	Preservation of highest quality agricultural lands
Ecological Reserves and Wildlife Lands	Excluded	Preservation of designated wildlife lands
Federal Land	Excluded	Land use compatibility
URBAN SCREENING CRITERIA		
River Buffer (500 m)	Excluded	Planning set-back from water courses
Clay Soils (10 metres thick)	Included	Protection of groundwater quality
Residential Zoned Land	Excluded	Land use compatibility
Large Lot Residential	Included	Land use compatibility
Industrial Zoned Land	Included	Land use compatibility
Rural Zoned Land	Included	Land use compatibility

3.2 Identification of Potential Sites

The land required for development of the hazardous waste management facility options varies from approximately 4 hectares (10 acres) for a Transfer/Storage facility, to 16 hectares (40 acres) for a combined Transfer/Storage/Treatment facility. If either of these two facilities were to be considered in the broader context of a waste management or environmental services industrial park, an additional land base would be required as dictated by the nature of the other developments considered. The Corporation initially approached City Administration with the opportunity to jointly participate in this development by allowing the consideration of City owned land in the site selection process. A request was subsequently made through the Department of Waterworks, Waste and Disposal to identify all potentially available City owned land, greater than 16 hectares (40 acres) in size. Table 4 lists the properties identified through this process.

TABLE 4

POTENTIAL CANDIDATE LOCATIONS
CITY OWNED PROPERTY

LOCATION	SIZE	LOCATION
1. Fernbank	83 acres	North of Fernbank Ave. and East of McPhillips St.
2. Peguis	63.9 acres	South of Ravelston Ave. and East of Peguis St.
3. Mazenod E.	88.2 acres	St. Boniface Industrial Park, East of Mazenod St.
4. Mazenod W.	118.9 acres	St. Boniface Industrial Park, West of Mazenod St.
5. Nicklin N.	79.9 acres	Transcona, North of Nicklin St., West of Murdock Rd.
6. Murdock W.	159 acres	Transcona, North of St. Boniface Rd., West of Murdock Rd
7. SEWPCC	651 acres	St. Vital, South of Perimeter Highway
8. Brady Road	760 acres	South of Perimeter between Brady Rd. and Waverley St.
9. Bishop Grandin	59.7 acres	Ft. Garry between Pembina Hwy. and Waverley St.
10. Kenaston	88.8 acres	Rothwell Rd. East of Kenaston and North of McGillivray
11. WEWPCC	1116 acres	Charleswood, West of Perimeter Hwy and South of Wilkes

Table 5 summarizes the characteristics of these properties and Figure 5 shows their location on the "Areas of Greatest Interest" map.

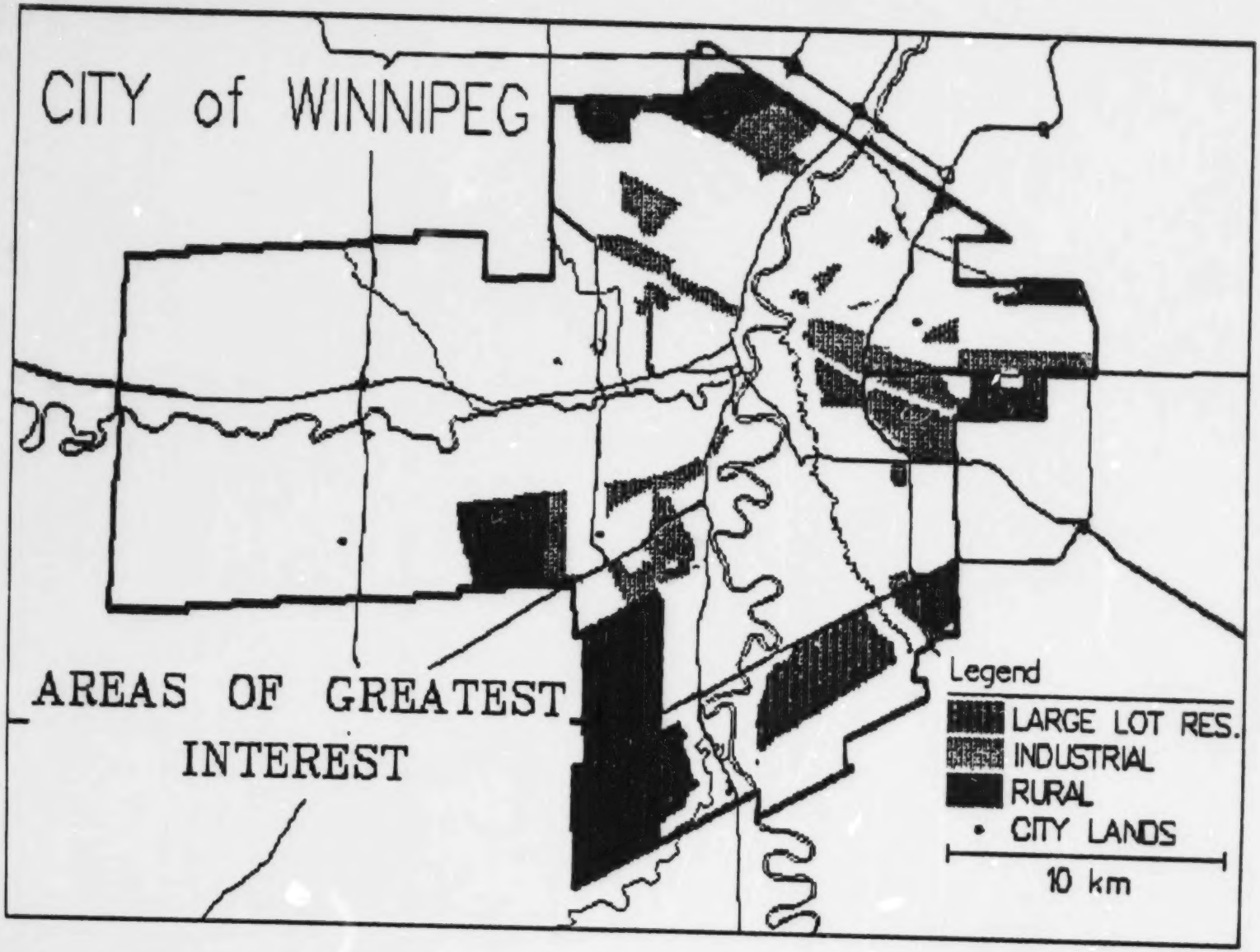
Based on the criteria used in the initial screening of the City, several of these properties are eliminated from further consideration. These are identified below, along with the reasons for their elimination:

1. Fernbank	Immediately adjacent to residentially zoned land, inactive landfill site;
2. Peguis	Residentially zoned area, reserved for stormwater impoundment;
9. Bishop Grandin	Bishop Grandin Blvd. extension corridor, immediately adjacent to residentially zoned land;
10. Kenaston	Sub-divided industrial park, immediately adjacent to residentially zoned land; and
11. WEWPCC	Thin soils, clay thickness is less than 10 metres.

Based on this screening, and giving consideration to the setting surrounding the remaining six properties, four alternatives were identified as having the highest potential. These are:

St. Boniface	The Mazenod East and West properties have been combined and renamed the St. Boniface location. It is located within the St. Boniface industrial Park and has a combined land area of 207.1 acres.
Murdock	Of the two properties in southeast Transcona, the Murdock location has the greatest potential. It is larger in size and further removed from existing residential development. The Nicklin location has therefore been dropped from further consideration.
SEWPCC	This property is large and associated with the South End Water Pollution Control Centre. It is adjacent to residential and large-lot residential subdivisions.
Brady Road	Brady Road is the long term solid waste landfill site for the City. It is large (currently being expanded to approximately 1,900 acres) and is located in an agricultural setting.

FIGURE 5



Manitoba Hazardous Waste Management Corporation

I.D. Systems Ltd.

TABLE 5
CITY OF WINNIPEG – PROPERTIES

Site	1. Fernbank	2. Peguis	3. Mazenod East
Location	North Winnipeg	Transcona	St. Boniface
Parcel Size	83 acres	63.9 acres	88.2 acres
Ownership	City of Winnipeg	City of Winnipeg	City of Winnipeg
Jurisdiction	Dist. #3 Operations	Waterworks, Waste	Surveys & Real Estate
SITE SCREENING			
Surficial Material	Clay	Clay	Clay
Depth of Material	12.5 – 18 metres	12.5 – 18 metres	15.5 – 18 metres
Aquifer	Limestone Bedrock	Limestone Bedrock	Limestone Bedrock
Zoning	Agriculture (A–1)	Agriculture (A–1)	Industrial (M–3)
Current Land Use	Landfill (Inactive)	Vacant, Reserved	Agricultural Lease
Adjacent Land Use	Industrial/Residential	Industrial/Residential	Industrial
Within Urban Limit	No	Yes	Yes
Screening Results	Included	Excluded	Included
Further Consideration	No	No	Yes

TABLE 5 (Cont'd)
CITY OF WINNIPEG – PROPERTIES

Site	4. Mazenod West	5. Nicklin North	6. Murdock West
Location	St. Boniface	Transcona	Transcona
Parcel Size	118.9 acres	79.7 acres	159 acres
Ownership	City of Winnipeg	City of Winnipeg	City of Winnipeg
Jurisdiction	Surveys & Real Estate	Surveys & Real Estate	Waterworks, Waste
SITE SCREENING			
Surficial Material	Clay	Clay	Clay
Depth of Material	12.5 – 18 metres	15 metres	15 metres
Aquifer	Limestone Bedrock	Limestone Bedrock	Limestone Bedrock
Zoning	Industrial (M–3)	Agriculture (A)	Agriculture (A)
Current Land Use	Agricultural Lease	Agricultural Lease	Agricultural Lease
Adjacent Land Use	Industrial	Residential/Agricultural	Agricultural
Within Urban Limit	Yes	No	No
Screening Results	Included	Included	Included
Further Consideration	Yes	No	Yes

TABLE 5 (Cont'd)
CITY OF WINNIPEG – PROPERTIES

Site	7. South End WPCC	8. Brady Road	9. Bishop Grandin
Location	South St. Vital	St. Norbert	Waverley Heights
Parcel Size	651 acres	760 acres	59.7 acres
Ownership	City of Winnipeg	City of Winnipeg	City of Winnipeg
Jurisdiction	Waterworks, Waste	Waterworks,/Operations	Streets & Trans.
SITE SCREENING			
Surficial Material	Clay	Clay	Clay
Depth of Material	14.3 metres	11 – 15 metres	12.5 – 15 metres
Aquifer	Limestone Bedrock	Limestone Bedrock	Limestone Bedrock
Zoning	Agriculture (A–1)	Agriculture (A)	Agriculture (A)
Current Land Use	Agricultural Lease	Landfill/Agric. Lease	Vacant/Corridor
Adjacent Land Use	Residential	Agriculture	Residential
Within Urban Limit	No	No	Yes
Screening Results	Included	Included	Included
Further Consideration	Yes	Yes	No

TABLE 5 (Cont'd)
CITY OF WINNIPEG – PROPERTIES

Site	10. Kenaston	11. West End WPCC
Location	Linden Woods	Charleswood
Parcel Size	88.8 acres	1,166 acres
Ownership	City of Winnipeg	City of Winnipeg
Jurisdiction	Surveys & Real Estate	Waterworks, Waste
SITE SCREENING		
Surficial Material	Clay	Clay
Depth of Material	9.5 – 12 metres	4 – 9 metres
Aquifer	Limestone Bedrock	Shale/Limestone
Zoning	Industrial (M3)	Agriculture (A)
Current Land Use	Vacant	Sewage Lagoon/Agric. Lease
Adjacent Land Use	Residential	Agricultural Lease
Within Urban Limit	Yes	No
Screening Results	Included	Excluded
Further Consideration	No	No

Each location option has sufficient land base to accommodate a combined Transfer/Storage/Treatment facility. The St. Boniface location, because of its industrial designation and additional land availability, and the Brady Road location may be more suitable for consideration of an industrial park dedicated to environmental industries.

A more detailed summary of each of these site options is presented in Appendix A. Table 6 summarizes their characteristics. Based on this initial evaluation, all four locations are potentially viable from a technical and environmental perspective and represent candidates for detailed site specific technical and environmental investigation.

3.3 Future Activities

This initial screening has been conducted for City owned property only. The Corporation is continuing to investigate the availability of other potential properties within the City including land held by provincial government agencies and, potentially, privately owned land. A community consultation program aimed at initiating public discussion on the development of hazardous waste management facilities within the City is underway. However, recognizing the responsibility and role the City must play to ensure the success of this undertaking, the Corporation will continue to work closely with the City and site specific investigations will only be undertaken with the continued approval of the City.

TABLE 6
CANDIDATE LOCATIONS – CITY OF WINNIPEG

Site	St. Boniface	Murdock	South End WPCC	Brady Road
Location	St. Boniface Industrial Park	Southeast Transcona	South St. Vital	St. Norbert
Parcel Size	207.1 acres (combined)	159 acres	651 acres	760 acres
Ownership	City of Winnipeg	City of Winnipeg	City of Winnipeg	City of Winnipeg
Jurisdiction	Surveys & Real Estate	Waterworks	Waterworks	Waterworks/Works & Operations
Surficial Material	Clay	Clay	Clay	Clay
Depth of Material	12.5 – 18 metres	15 metres	14.3 metres	11 – 15 metres
Aquifer	Limestone Bedrock	Limestone Bedrock	Limestone Bedrock	Limestone Bedrock
Zoning	Industrial (M–3)	Agriculture (A)	Agriculture (A–1)	Agriculture (A)
Current Land Use	Agricultural Lease	Agricultural Lease	Agricultural Lease	Landfill/Agric. Lease
Adjacent Land Use	Industrial	Agricultural	Residential	Agriculture
Distance to Residential Land	900 m (Windsor Park)	300 m (South Transcona)	500 m (South St. Vital)	400 m (Richmond Lakes)
Within Urban Limit	Yes	No	No	No
Screening Results	Included	Included	Included	Included
Topography	Flat	Flat	Flat	Flat
Surface Water	No Wetlands	No Wetlands – Seasonal Ponding	No Wetlands – Perimeter Drains	No Wetlands – Drainage Ditches
Natural Habitat	Woodlot (15 acres)	Woodlot (50 acres)	Woodlot (8 acres)	Cleared Agricultural Land
CLI Classification				
Agriculture	Class 3	Class 3	Class 2	Class 2 & 3
Ungulates	Class 4–7	Class 4–7	Class 4–7	Class 4–7
Waterfowl	Class 4–7	Class 4–7	Class 4–7	Class 4–7
Distance to Truck Route	0.9 km North (Dugald Rd.)	0.8 km North (Dugald Rd.)	Adjacent to Perimeter Hwy.	Adjacent to Perimeter & Waverley
Distance to Rail	Adjacent to Site	1.0 km North	2.5 km east	1.7 kilometres Northwest
Services – Water	Available Locally	Not Serviced	Serviced on Site	Not Serviced
Sewer	Available Locally	Not Serviced	Serviced on Site	Not Serviced
Power	Available Locally	Available Locally	Serviced on Site	Available Locally
Natural Gas	Available Locally	Available Locally	Serviced on Site	Main Pipeline Traverses Site

APPENDIX A

CANDIDATE LOCATION DESCRIPTIONS

BRADY ROAD

General Setting

The site is located south of the Perimeter Highway #100, north of Trappistes Road, east of Brady Road and west of Waverley Street. The Brady Road Municipal Landfill is the dominant land use; the remainder of the property is leased for agriculture. The R.M. of MacDonald is directly west of the Brady Road site. This land is zoned agricultural and is under cultivation.

Terrain and Natural Features

There are small clumps of trees on the site and a wind-break running the length of the border between the actual landfill portion and the cultivated portion.

The site is cultivated with no significant natural habitat evident on the property. The site is relatively flat with drainage assistance from well maintained perimeter ditches.

Surficial Geology and Groundwater

Surficial materials consist of from 11 to 15 metres of lacustrine clay overlying a silty glacial till. Investigations for the landfill indicate the clay has a low hydraulic conductivity (10-8 cm/sec). The underlying till ranges in depth from 2 to 8 metres and has a higher hydraulic conductivity (10-6 cm/sec).

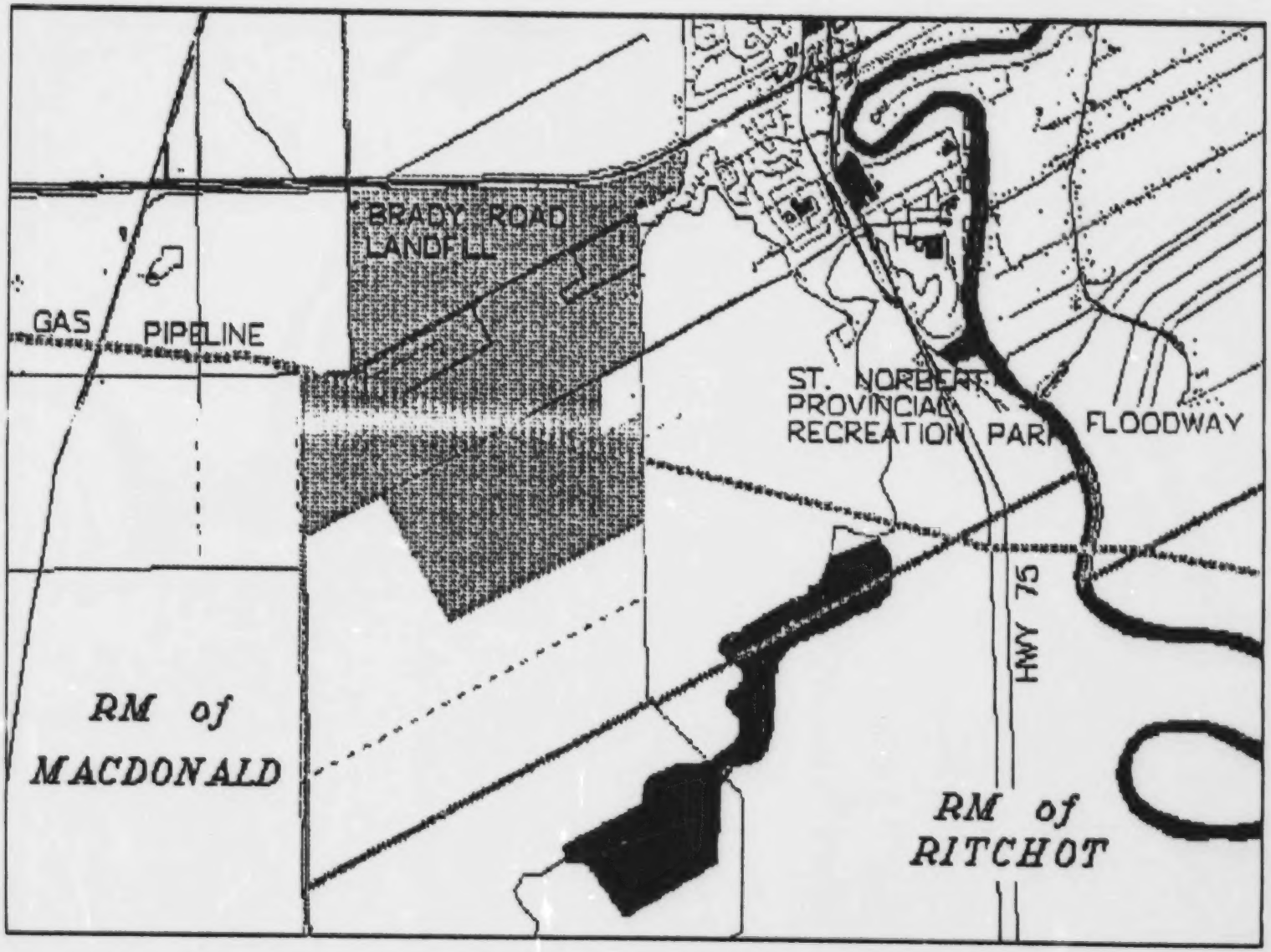
Groundwater movement through the clay is generally vertically downward. Groundwater use in the area is generally restricted to the underlying limestone (carbonate) aquifer.

Infrastructure

- Sewer: The site is not serviced by the City sewer system, but the service is available locally.
- Water: The site is not serviced by the municipal water system however, it is available locally.
- Hydro: A major hydro power line runs down the east side of the property. A sub-station is located at the corner of Waverley and #100.
- Natural Gas: The main Trans-Canada pipeline system traverses the site south of the existing landfill.
- Access: Road access is good via #100, Brady Road or Waverley Street. A rail spur, servicing local industries is located approximately 1.7 km northwest of Brady Road.

Surrounding Land Use

The land south and west of Brady Road lies in the R.M. of MacDonald and is under cultivation. Land within the City of Winnipeg and north of the site (north of perimeter) is also under cultivation. Relatively new sub-divisions (Richmond West and Richmond Lakes) are developing to the north and east of the site. There are also some country residences to the east of the site along Waverley. The nearest residence is 300 - 400 metres from the most easterly portion of the active landfill site. La Barriere Park is located along the LaSalle River south east of the site on Waverley.


BRADY ROAD
LANDFILL
GAS
PIPELINE
ST. NORBERT
PROVINCIAL
RECREATION PARK
FLOODWAY
HWY 75
RM of
MACDONALD
RM of
RITCHOT

SOUTH-END SEWAGE TREATMENT PLANT

General Setting

The site is located east of the Red River and south of the Perimeter Highway #100. The site consists of 651 acres located between St. Mary's Road and St. Anne's Road. The south side is bounded by Forbes Road. The water pollution control plant is the dominant feature on the site. The land is currently leased for agriculture.

Terrain and Natural Features

A small woodlot (approximately 8 acres in size) is located on the north west portion of the property. All remaining land is cleared and cultivated. There is no significant natural habitat on the site.

The land is flat and drainage is assisted by well maintained perimeter ditches. The site lies between the Seine and Red Rivers.

Surficial Geology and Groundwater

The site is underlain by approximately 14 metres of lacustrine clay. Based on local water well drilling logs, a layer of silty till (approximately 5 metres thick) overlies the limestone bedrock. Water quality in the carbonate aquifer underlying the site is poor due to its high salt content.

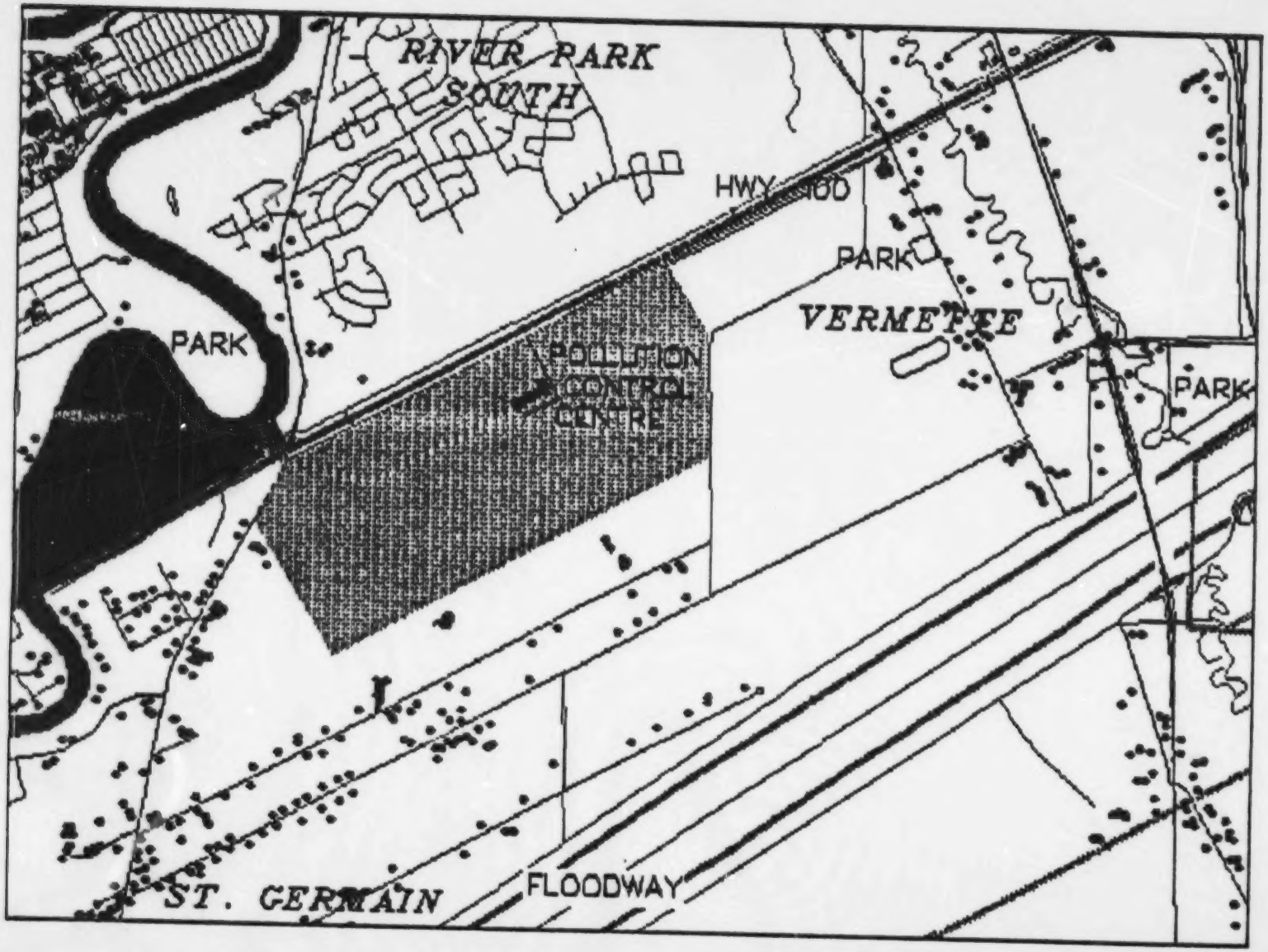
Infrastructure

Services:

- Sewer: The site is located next to the sewage treatment plant.
- Water: City water supply is available locally.
- Hydro: There are major transmission lines running east - west to the north of #100.
- Natural Gas: Natural gas service is available locally.
- Access: Good road access from #100. The nearest rail line is located approximately 2.5 kilometres east along Highway #59.

Surrounding Land Use

The developing River Park South residential subdivision is located directly north of #100. The land along St. Mary's Road has many older country residences, market gardens and green houses. To the south and east of the site are many newer country residences on one or two acre lots. There is a small park on the Red River near the water outlet from the treatment plant.


RIVER PARK
SOUTH
HWY 100
PARK
VERMETTE
PARK
POLLUTION
CONTROL
CENTRE
PARK
ST. GERMAIN
FLOODWAY

ST. BONIFACE

General Setting

The site is located south of Dugald Road and north of the CNR Symington Yards. It is bounded on the east by Plessis Road and on the west by an industrial area. Highway #59 is on the westerly side of this industrial area and Windsor Park, a major residential area is located approximately 900 metres west of the site. Another residential subdivision (Mission Gardens) is located north of Dugald road approximately 1.5 kilometres from the site. The site is surrounded by industrially zoned land.

The Greater Winnipeg Water Authority rail line and pipeline runs along the northern boundary of the site. The Deacons Reservoir is approximately 6 to 8 kilometres east of the site. The site is currently leased for agriculture.

Terrain and Natural Features

There is a large stand of scrub Aspen and brush (approximately 15 acres in size) along the north side of the site.

The area is flat and appears relatively well drained. A large retention pond servicing the developed portion of the industrial park lies to the north of the site.

Surficial Geology and Groundwater

The site is underlain by lacustrine clay ranging from 12.5 to 18 metres thick. The aquifer is located in the limestone (carbonate) bedrock.

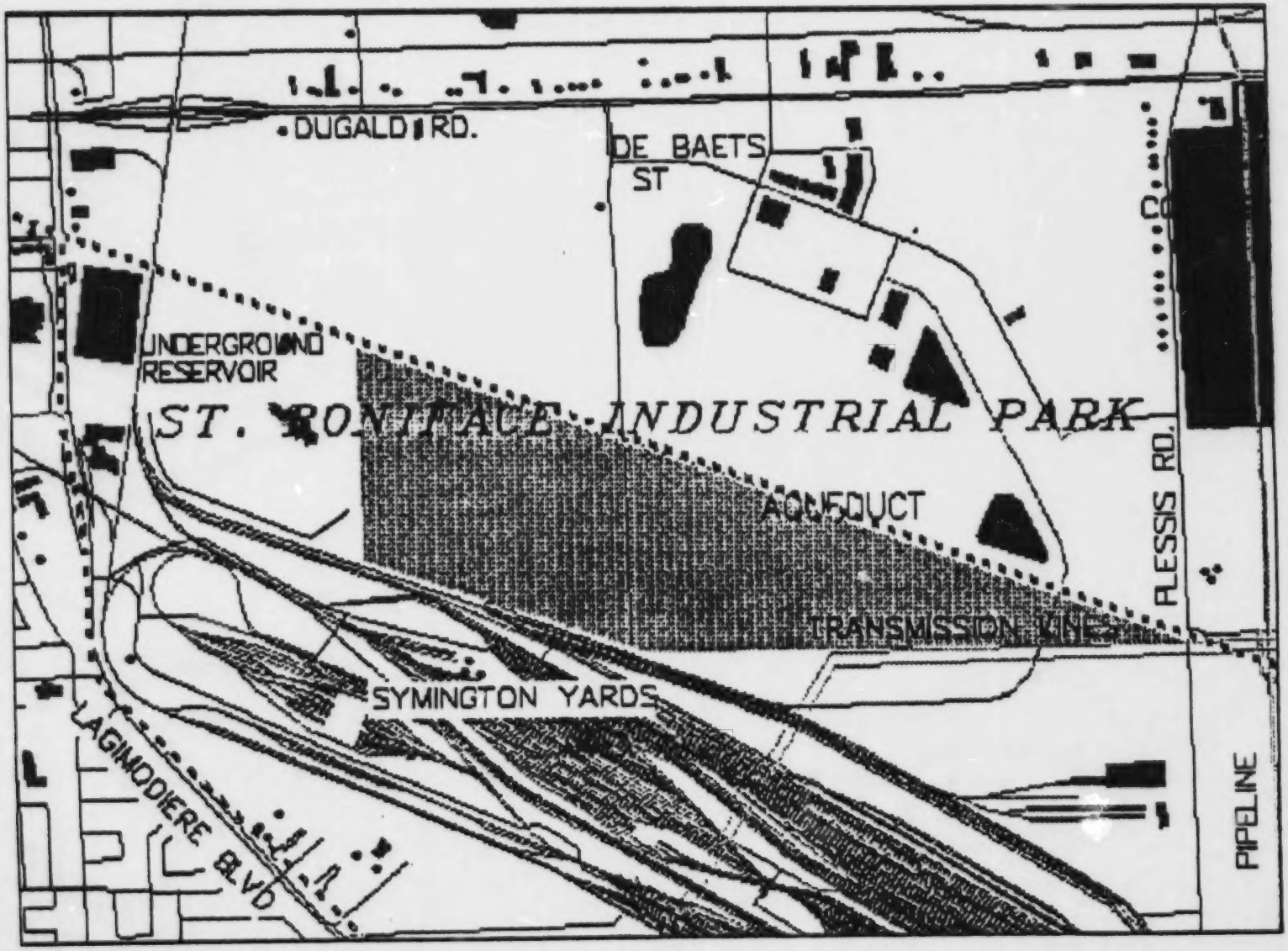
Infrastructure

Services

- Sewer: The site is within the urban limit line and City sewer service is available locally.
- Water: The site is within the urban limit line and City sewer service is available locally.
- Hydro: A major power line runs along the south and north boundary of the site.
- Natural Gas: The industrial park to the north of the site is serviced by natural gas.
- Access: Road access exists from Dugald Road along Mazenod. Access is also developable from Plessis Road to the east. Rail access potential is excellent with the CNR Symington yards located immediately to the south.

Surrounding Land Use

The surrounding land use is exclusively industrial. The nearest residential land is located 900 metres west (Windsor Park) and about 1.5 kilometres north (Mission Gardens).


DUGALD RD.
DE BAETS ST
UNDERGROUND RESERVOIR
ST. BONIFACE INDUSTRIAL PARK
AQUEDUCT
TRANSMISSION LINE
PLESSIS RD.
SYMINGTON YARDS
LAGIMODIERE BLVD
C.N.R.
PIPELINE

MURDOCK

General Setting

The site is located on the far east side of Winnipeg, and is bounded by the R.M. of Springfield on the east and south. Land within the City is designated for large lot residential. The site is currently leased for agriculture. A small residential area (Transcona South) is located along Dugald Road north and west of the site. Country residential development exists west of the site and within the R.M. of Springfield east and south of the site.

The site is approximately 1 kilometre north of the Greater Winnipeg Water District rail line and pipeline. The Deacon reservoir is located approximately 3 kilometres southeast of the site.

Terrain & Natural Features

There is a woodlot, approximately 50 acres in size, located in the southwest portion of the site.

The land is flat and apparently experiences seasonal drainage problems. A well maintained drainage ditch runs along the east and south perimeters of the site.

Surficial Geology and Groundwater

Based on water well drilling records, the site area is underlain by approximately 15 metres of lacustrine clay. The limestone bedrock is overlain by up to 10 metres of silty till and some sand and gravel may be encountered at the bedrock surface. Local groundwater supplies are developed in the limestone bedrock.

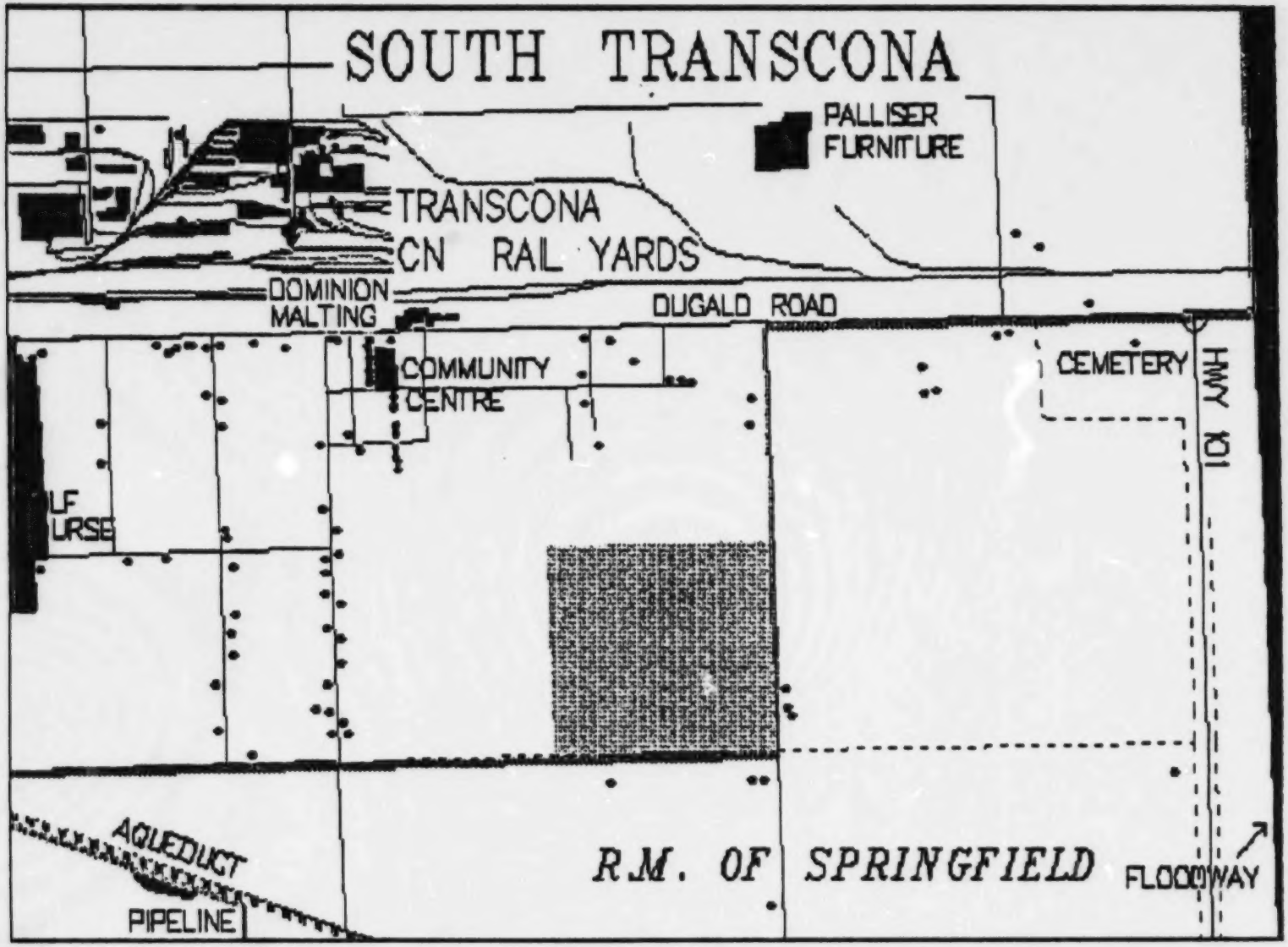
Infrastructure

Services:

- Sewer: The site is not serviced but access to the City sewer system would be available locally.
- Water: The site is not serviced but access to the City water system would be available locally.
- Hydro: A major hydro line runs along the south perimeter of the site.
- Natural Gas: Natural gas service is available locally.
- Access: There is good access from either the north, (Dugald Road) or the south (#1 highway) along Murdock Road. The nearest rail line is located 1.0 kilometre north along Dugald Road.

Surrounding Land Use

The surrounding land use is largely agriculture. Most adjacent land is under cultivation. There is country residential development west of the site and a residential sub-division located north of the site. Property immediately south of the site within the R.M. of Springfield is zoned rural but is shown as being subdivided on some maps.


SOUTH TRANSCONA
PALLISER FURNITURE
TRANSCONA CN RAIL YARDS
DOMINION MALTING
DUGALD ROAD
COMMUNITY CENTRE
CEMETERY
HWY 101
LF URSE
AQUEDUCT
PIPELINE
R.M. OF SPRINGFIELD
FLOODWAY